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THE SCIENTIST AS A COMIC TYPE

In the chapter entitled "The Progress of Science," contributed to the *Cambridge History of English Literature* by Mr. A. E. Shipley, there is the following summary characterizing the scientist as he appeared in comedy: "To the play-writer of the time [the age of Dryden], the man of science or pseudo-science was a vague, peevish pedant, much occupied with physiognomies, dreams, and fantastic ideas as to the properties and powers of various substances."¹ The sentence was evidently written without a full knowledge of the comic type of the period, certainly with no first-hand knowledge of the new scientific humor that was born of and nurtured by the Royal Society. It is the purpose of this paper, therefore, to show how a new type came into comedy that was far different from the "vague, peevish pedant" of alchemy, astrology, and witchcraft.

The period from 1660 to 1700 saw the rise of the new science, or experimental philosophy, based on the inductive method of Sir Francis Bacon. The founding of the science was due to the untiring efforts of a small group of men in and about London, who banded themselves together to study the "New Philosophy," "not meddling with Divinity, Metaphysicks, Moralls, Politicks, Grammar, Rhetoric, or Logic."² Among these early scientists the most noted were Wilkins, Wallis, Boyle, Hooke, Barrow, Sloane, and Newton. It was they who established the Royal Society and ambitiously undertook to reconstruct the natural history of the world.

It may be well in the beginning to distinguish the purpose and the method of the experimental philosophers from those of the pseudo-scientists of alchemy, astrology, and witchcraft. The alchemists were ever in search of the Philosopher's Stone; they wanted to discover some cheap and easy way to transmute the baser metals to gold. Such men were not an unfamiliar sight in the London of the age of Dryden.³ The astrologers were still preying upon the

¹ *Cambridge History of English Literature*, VIII, 419.

² John Wallis, Letter to the Royal Society, 1696.

³ Cf. Ashmole's *Theatrum Chymicum*, and Hathaway's *The Alchemist*, Introduction.

credulity of the ignorant with their prognostications and fortune-telling.¹ Witchcraft continued to have believers even among the learned who refused to apply common sense to the strange tales that ran from lip to lip.² But the new scientists early adopted a motto which was a challenge to every pseudo-science of the day: *nullius in verba*. "No arguments are received as cogent, no principles allowed as current, but what in themselves are intelligible," wrote William Wotton, a Fellow of the Society and a staunch defender of the new faith.³ "This Society will not own any Hypothesis, System, or doctrine of the Principles of Naturall Philosophy, proposed or mentioned by Philosopher ancient or modern, nor the explication of any phenomena whose recourse must be had to the original causes (as not being explicable by Heat, Cold, Weight, Figure, and the like, as Effects produced thereby)," declared the professional experimenter of the Society.⁴ Everything was to be examined anew, "all Systems, Theories, Principles, Hypotheses, Elements, Histories, and Experiments of Things, Naturall and Mechanical, invented, recorded, or practiced, by any considerable author ancient or modern."⁵ The foundations of the new philosophy were to be laid strong and deep in countless experiments, out of which should rise into definition a solid mass of new truth. No authority was to be convincing because it was old; no conclusions were to be scouted because they were new.

The Society found royal favor and succeeded in making experimenting popular. Charles II had a laboratory built in Whitehall, which Pepys visited.⁶ "It was almost necessary to the character of a fine gentleman to have something to say about air-pumps and telescopes."⁷ Membership in the Society increased rapidly; in 1663 there were 131 Fellows.⁸ Its fame spread through the social circles of London, so that the city was filled with ballads when the well-known Duchess of Newcastle attended one of its meetings.⁹ A need

¹ Cf. Swift's *Partridge Papers*.

² Cf. Glanvill's Essay VI and *Sadducismus Triumphatus*.

³ *Reflections upon Ancient and Modern Learning*, p. 364.

⁴ Hooke's MS Papers, quoted by Weld, *History of the Royal Society*, p. 146.

⁵ Hooke's MS Papers, quoted by Weld, *op. cit.*, p. 145.

⁶ Cf. *Diary*, May 30, 1667.

⁷ Macaulay, *History of England*, I, 376.

⁸ MS List of Fellows, British Museum MS 4442.

⁹ *Pepys' Diary*, May 30, 1667.

was felt for a permanent record of the Society's activities, and the secretary, Henry Oldenburg, was authorized to prepare a transcript of all papers, a review of all new books of interest to science, and to describe the experiments performed before the members at their meetings. The secretary followed these instructions and published in March, 1655, the first copy of the *Philosophical Transactions*, a publication which has continued to this day the official organ of the Royal Society.

It is not strange, therefore, that, with the rise of this new antagonistic scientific interest, the old pseudo-science should fade out of the comedies. Such characters as Mopus in the *Cheats* (1662), the two astrologers in the Prologue to Dryden's *The Wild Gallant* (1663), the "Mock Astrologer" in Dryden's *An Evening's Love* (1665), the "Mock Doctor" in Lacy's *The Dumb Lady* (1672) were really out of date and already conventionalized. The pseudo-sciences had not disappeared, to be sure, witness Ashmole's *Theatrum Chymicum*, Swift's *Partridge Papers*, and the astrologers, Lilly, Evans, Captain Bubb, Jeffrey Neve, and Dr. Ardee, but the new scientific attitude was opposed to such beliefs.

One of the earliest characters in comedy that has any direct connection with the interest of the new scientists is Veterano in Shackerley Marmion's *The Antiquary* (1641). The name of the play is taken from this character, whose "affects, spirits, and powers, in their confluitions, all run one way" toward antiquarian research. But antiquarianism in comedy meant simply a foolish curiosity about "rarities." Veterano is thus characterized by his nephew, Lionel, who has designs upon the old man's money: "He is grown obsolete, and 'tis time he were out of date. They say he sits all day in contemplation of a statue with ne'er a nose, and doats on decays with greater love than the self-loved Narcissus did on his beauty."¹ False antiques, of course, are palmed off on this old man; he is represented as a despicable fool, the gull and dupe of everyone. He is in truth a "vague, peevish pedant," but he has little or nothing in common with the new scientists except the interest in things ancient.²

Under the name of Oldlove, Veterano reappeared in Thomas Durfey's comedy, *Madam Fickle* (1677). He is still the worshiper

¹ *The Antiquary*, Act I, scene 1.

² Cf. Birch's *History of the Royal Society*, I, 64.

of antiquity, still stupidly gullible; he is not respected nor is he worthy of respect. "Is there anything," he asks, "more pleasant than antiquities? The Knowledge of the distinction of the Ages, or the deeds and manners of the Ancients, I say, is there anything more pleasant?"¹ Almost a century later, practically the same character was revived as Sir Matthew Mite, in Foote's comedy, *The Nabob* (1773). Eight years later, he appeared once more as the hero of John O'Keefe's *Modern Antiques* (1791). These characters are all cut after the same pattern; they are all old, wealthy, noble—or pretend to be—men who waste their money in a foolish manner on "modern antiques." While they have an interest in common with the new scientists, they could have found no place among them. These characters were only an old Jonsonian humor pensioned in dotage.²

The first new scientist appeared on the comic stage in Shadwell's *The Virtuoso* (1676). According to Langbaine, "no man ever undertook to discover the Frailties of such Pretenders to this kind of Knowledge before Mr. Shadwell." The author himself lays claim to originality in his characterization:

In this are Fools, that much infest the town,
Plenty of Fops, Grievances of this Age,
Whose nauseous Figures ne'er were on the Stage.³

The name of Sir Nicholas Gimcrack soon became attached to all manner of scientific apparatus, and was synonymous for years with scientific crankism.⁴

What manner of man he was may be clearly seen from the comments made upon him by the other characters in the play. Snarl, the cynic, says of him: "My nephew is such a coxcomb, he has study'd these twenty years about the nature of Lice, Spiders, and Insects."⁵ His friend, Sir Samuel Formal, rhetorician, asserts: "He is an enemy to wit as all Virtuoso's are."⁶ Clarinda calls him a "sot that has spent twenty thousand pounds in Microscopes, to find out the Nature of Eels in Vinegar, Mites in Cheese, and the

¹ Act III, scene 1.

² A Society of Antiquaries had been organized in 1576. The new scientists were commonly known as "virtuosoes."

³ The Prologue.

⁵ *The Virtuoso*, Act I, scene 1.

⁴ Cf. *The Number*, 216.

⁶ *Ibid.*

Blue of Plums."¹ "One who has broken his Brains," adds Miranda, "about the Nature of Maggots, who has study'd these twenty years to find out the Spots of a Spider, and never cared for understanding Mankind."² Longvil, who has some reason to denounce him, declares: "I would rather be a Trumpeter to a Monster, and call the Rabble to see a Calf with six Legs, than such a Blockhead."³

Sir Nicholas first appears in the second act of the comedy, in his laboratory, "a spacious Room, where all his Instruments and fine knick-knacks are." The scientific apparatus includes microscopes, telescopes, thermometers, barometers, "pneumatick Engynes, stentrophonical Tubes." Fragments of dead insects lie scattered about the room and special colonies of live ones are crawling about in the corners. As the scene opens Sir Nicholas is discovered in the midst of one of his ridiculous experiments; he is learning to swim by lying on the table and imitating the motions of a frog in a dish of water in front of him. "A most compendious method," announces Sir Samuel Formal, "that in a fortnight, has advanced him to be the best swimmer of Europe. Nay, it were possible to swim with any fish of his inches."⁴

Longvil: Have you ever tried in Water, Sir?

Sir Nicholas: No, Sir. But I swim most excellently on land.

Bruce: Do you intend to practice in the Water, Sir?

Sir Nicholas: Never, Sir, I hate Water. I never come upon the Water, Sir.

Longvil: Then there will be no use of swimming.

Sir Nicholas: I content myself with the Speculative Part of Swimming. I care not for the Practick. I seldom bring anything to Use; 'tis not my Way. Knowledge is my ultimate End.⁵

There were many experiments to follow. There was a transfusion of blood, a dissection of a "Chichester Lobster," the bottling of fine upland country air to be stored in the cellar of the city house like wine, the eclipsing of the "light of rotten wood" in a vacuum, the testing of the magic properties of may-dew, the study of the habits of insects, the observation of the world in the moon through the telescope, the invention of a wonderful speaking trumpet, the mastery of the art of flying. These are the things that occupy the mind

¹ *Ibid.*

³ *Ibid.*, Act II, scene 1.

⁵ *Ibid.*

² *Ibid.*

⁴ *Ibid.*

of the new scientist. He is not peevish nor vague, but he is pedantic to an extreme degree. He has taken the whole realm of knowledge to be his province, to be investigated for the theoretical principles underlying it. He is busied, not with "physiognomies, dreams, and fantastic ideas as to the properties and powers of various substances," but with experiments in chemistry, in physics, in zoölogy, in astronomy, and with inventions.

The source of material for these experiments is largely the *Philosophical Transactions*. Nearly all of Shadwell's allusions and much of his phraseology may be traced to the reports of experiments by members of the Royal Society, published in the *Transactions* a short time before the presentation of *The Virtuoso*. For instance, witness Swammerdam's letter, October 26, 1667, and the experiments of Robert Hooke, October 24, 1667, on respiration; on the trans-fusion of blood, witness the report for May 6, 1667, and the experiments of Drs. Lower and King at the Arundel House, November 16, 1666; on the study of spiders and tarantulas, witness a discussion by I. Wray, "On Spiders," and a review of S. W. Senguerdius' *De Tarantula*;¹ on "Eels in Vinegar," witness Leeuwenhoek's letter from Delft, April 21, 1676; on glow-worms, witness Robert Boyle's report, February 15, 1672; on speaking trumpets, witness drawing and explanation by Sir Samuel Moreland, in *Philosophical Transactions*, January 27, 1672. On the art of flying there was the well-known book by Dr. Wilkins, *The Discoverer of a New World; or a Discourse Tending to prove that 'tis Probable there may be another Habitable World in the Moon* (1638). In Lord Worcester's *Century of Inventions* (1655), No. 77 reads, "How to make a Man Fly; which I have tried with a little Boy of ten years old in a Barn, from one end to the other, on a Hay-mow."² It is clear, therefore, that Shadwell simply "crammed up" his scientific facts for this comic character. Even a cursory reading shows that he consciously and wantonly garbled the facts from the *Transactions*.

But these are facts gleaned from the observations of the new philosophers, the experimental scientists, not from astrologers, alchemists, or witchmongers. These are the facts, treated after the

¹ *Philosophical Transactions*, III, 660.

² Cf. also, Anthony a Wood's *Athen. Oxon.*, II, col. 969; Hooke's *Micrographia*, Preface, p. 19.

manner of satiric comedy, which led to the great discoveries of the period—the law of gravitation, the compressibility of air, the analysis of light, the discovery of bacilli, etc. It will be observed that they deal not with “physiognomies, dreams,” and only rarely, as in the case of may-dew, with “the fantastic properties and powers of substances.” These are the facts of nature burlesqued.

Vagueness and peevishness are not points of satire in the character of Sir Nicholas. He is in fact too assertive, too sanguine, too optimistic about his researches and their importance. But he is a pedant. The knowledge which he professes is all bluff. The essential point, however, lies in this claim of the satirist that such knowledge, if possessed, would be of no use to mankind. This is indeed the essence of all the criticism on the new scientific interest. “This foolish virtuoso does not consider that one Bricklayer is worth forty Philosophers.”¹ “So it is knowledge, ’tis no matter of what.”² And this, the greatest virtuoso of them all, had not invented “even so much as a Mousetrap or an Engyne to pare Cheese with.”³

Furthermore, it was convincing evidence of a mean, despicable character or a cracked brain to be interested in “mean, despicable creatures, such as Spiders, ants, lice, and other vermin,” to the exclusion of society and politics. To use learned language would not dignify the interest; it was essentially low and vulgar. There was no standard of comparison known to Shadwell to show how far beneath the interest and importance of the ballroom was the laboratory, how much more befitting a man were the intrigues of social life than the knowledge of the habits of insects, how much more learning abounded in a coffeehouse than in the lonely study.

This is the type of the new scientist as comedy first found him. He follows the inductive experimental method announced by Sir Francis Bacon, and strives to accomplish the purpose of scientific study as proposed by him, viz., to reconstruct the natural history of the world. His conclusions may be too largely speculative, he may bring nothing to the “practick” in comedy, but his prototype in real life was neither a charlatan nor a fool. The man of the new science as the playwrights misrepresented him, was a fool, because

¹ *The Virtuoso*, Act IV, scene 1.

² *Ibid.*, Act III, scene 1.

³ *Ibid.*, Act V, scene 1.

he was engaged in the vain pursuit of useless knowledge, a pedant, because he was a mere pretender to learning, and a generally despicable character, because he was wholly absorbed in a low, vulgar interest outside the social realm of London society folk. "'Tis below a Virtuoso to trouble himself with Men and Manners. I study Insects.'"¹

The new scientific humor reappeared frequently in comedy. In Shadwell's *Sullen Lovers* (1688), Lady Vaine Knowall, who prides herself on her mercurial temperament, lays claim to being a "virtuosa";² but this is only a claim. She is a mere "she-pedant," with no discoveries to proclaim, no experiments to perform. Lady Maurice, in Thomas Wright's *The Female Virtuoso* (1693-97), is much more of a "virtuosa" than Lady Vaine Knowall. Her head is filled with "projects." "I was yesterday with my Lord Mayor, to communicate to him a Mathematical Engine of my own, to keep the streets as clean, and as dry as a drawing Room all the year around."³ Lovewit, in the same play, has a huge limbec in the process of manufacture "to extract the quintessence of all plays, to sell drop by drop to poets of this age."⁴ Catchat, likewise, has recently discovered "three Men in the Moon fighting a duel in a Church-yard," and is now engaged in teaching a flea to sing. "The little Creature," says she, "understands notes already; and if I live, she shall sing a song in the next opera that's acted."⁵

The best representative of the female virtuoso and a fit consort for Sir Nicholas Gimcrack, is Valeria in Mrs. Centlivre's *The Basset-Table* (1706). She is "a Daughter run mad after Philosophy." At her first appearance, she dashes upon the stage in the mad pursuit of a huge flesh-fly, which she has just received for vivisection.

Lady Reveller: I am glad the poor Fly escaped; will you never be weary of these Whimsies?

Valeria: Whimsies! Natural Philosophy a Whimsy! Oh the unlearned World!

Lady Reveller: Ridiculous Learning!

¹ *The Virtuoso*, Act II, scene 1.

² "Madam, d'ye think I, that am a Virtuosa, understand no better than to leave you, now you are not well?"—*Sullen Lovers*, Act II, scene 2.

³ Act II, scene 1.

⁴ Act IV, scene 2.

⁵ *The Female Virtuoso*, Act III, scene 1.

Alpiew: Ridiculous indeed for women. Philosophy suits our Sex as Jack-Boots do. . . .

Lady Reveller: My Stars! This girl will be mad, that's certain.

Valeria: Mad! So Nero banished Philosophers from Rome, and the first Discoverer of the Antipodes was condemned for a heretic.¹

A bluff sea-captain, designed by Valeria's whimsical father for her husband, is announced in this fashion:

Servant: Madam, here's Sir Richard, and a . . .

Valeria: A what, is it an Accident, a Substance, a Material Being, or a Being of Reason?

Servant: I don't know what you call a Material Being, it is a man.

Valeria: Pshaw, a Man, that's Nothing.

Lady Reveller: She'll prove by and by out of Descartes that we are all Machines.²

Valeria's wits have all run to experiments; she can talk of nothing except her discoveries and investigations. "I would ask of you, Sir, if you had the curiosity to inspect a Mermaid? Or if you are convinced there is a world in every Star. We by our Telescopes, find Seas, Groves, and Plains, and all that; but what they are peopled with, that's the quere."³ She, like Sir Nicholas, is shown in her laboratory,⁴ with a fish ready for dissection. She exclaims over the circulation of blood through its tail; she exhibits to the admiring Lovely, her suitor, the joint-worm, the *Lambricus Laetus*, which she has found "in opening a Dog the other Day." She asserts that "animals, insects, and reptiles can be put to no nobler use than to improve our knowledge."⁵ She dissects her pet pigeon to refute the "vulgar error" that doves have no gall; she is familiar with the Cartesian and new scientific nomenclature; she makes eager inquiry of travelers concerning marvels in foreign lands. In a word, she is a thoroughgoing new scientist.

There were other characters of the same ilk, but they do not show any new traits. Periwinkle, one of the four guardians of Mrs. Lovely in *A Bold Stroke for a Wife* (1718), is a man given over to a search for odd knowledge and a love for "rarities." Sophronia, in *The Refusal; Or, The Ladies Philosophy* (1721), is described as a "Female Philosophic Saint," who proves to be merely a conventional "she-pedant." There is Fossil, in Gay's *Three Hours After Marriage*

¹ *The Basset-Table*, Act II, scene 1.

² *Ibid.*

³ *Ibid.*

⁴ *Ibid.*

⁵ *Ibid.*

(1721), a "physician interested in rarities." There is Lady Science, in James Miller's *The Humours of Oxford* (1726), who is called by her niece, "Lady Gimcrack," and who is almost always "in an universal Fermentation" of scientific pedantry. There is, finally, the contrast between the false scientific pedant and the true scientific scholar in *The State of Physic* (1742). Dr. Mody is "a Physician of Note, formal, and pretending to Learning"; Dr. Easy is a sentimental hero, in type, modest and trustworthy, who has taken the great "new philosopher," Sydenham, for his model.

It was thus that the scientific humor found exploitation in the comedies of the period from the founding of the Royal Society to the middle of the eighteenth century, when science had reached an honorable position among the intellectual interests of men. While the old pseudo-sciences lingered on the stage as well as in the by-ways of life, they had lost their fresh appeal and were conventionalized. A new kind of material, as has been seen, was discovered by the play-writers—material drawn for comic uses directly from life. The virtuoso, a new scientist, was created to represent the new material. He quickly transplanted the older type. There was, to be sure, the accusation of pedantry and of pseudo-science leveled against him also, but alchemy, astrology, and witchcraft were not among his interests.¹

This new type was definitely the experimental philosopher, not a "vague, peevish pedant," not "much occupied with physiognomies, dreams, and fantastic ideas as to the properties and powers of various substances," but busied with observation and experimentation, with investigation, with the reconstruction of the natural history of the world. The accusation of pedantry was a convention inherited by the writers of comedy of this period, but the satiric thrust contained in the meanness and uselessness of such knowledge is their own. Sir Nicholas Gimcrack admits that he has never made anything so useful as a mousetrap or an engine to pare cheese with. "The Dressing-Room, and not the Study," says Gainlove, "is the Lady's Province—and a Woman makes as ridiculous a Figure, poring over Globes, or through a Telescope, as a Man would with a Pair of

¹ Cf. the attitude in Shadwell's *Lancashire Witches* (1682) and Addison's *The Drummer* (1715).

Preserves mending Lace.”¹ “Study your Country’s Good, Mr. Periwinkle,” advises Mrs. Lovely, “and not her insects.”² The antiquarian humor wasted good money; scientific study cracked the brains of men and made women unfit for wives; the character of the individual became as mean and despicable as the objects it studied.

It follows, therefore, that the characterization of the scientist of the age of Dryden as “a vague, peevish pedant, much occupied with physiognomies, dreams, and fantastic ideas as to the properties and powers of various substances,” is not accurate. It does not take into consideration the wholly new type, drawn from the new interest of the time. This new type has been found in Sir Nicholas Gimcrack and his followers, male and female. They are the comic presentation of the new experimental philosophy.

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¹ *The Humours of Oxford*, Act V, scene 1.

² *A Bold Stroke for a Wife*, Act III, scene 1.